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10/808,478

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Masayasu Suzuki

50195-418

6313

7590

06/30/2006

McDERMOTT, WILL & EMERY
600 13th Street, N.W.
Washington, DC 20005-3096

EXAMINER

TRAN, DALENA

ART UNIT

PAPER NUMBER

3661

DATE MAILED: 06/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 10/808,478 | Applicant(s) SUZUKI ET AL. | |
| | Examiner Dalena Tran | Art Unit 3661 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8-9,15 is/are allowed.
- 6) ☒ Claim(s) 1-7,10-14 and 16-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Notice to Applicant(s)

1. This office action is responsive to the amendment filed on 4/7/06. As per request, claims 1, 8, 10, and 12-14, 16 have been amended. Claims 17-20 have been added. Thus, claims 1-20 are pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4, 6, 12-14, and 17-20, are rejected under 35 U.S.C. 103(a) as being unpatentable over Jitsukata et al. (6169940) in view of Gan et al. (5835880).

As per claims 1, 13, 17, and 19, Jitsukata et al. disclose an information providing device installed in a leader vehicle that leads a follower vehicle, for providing the follower vehicle with guidance prepared by the leader vehicle, the information providing device comprising: a state detector configured to detect a state change in the leader vehicle to output a detecting signal, wherein the state change occurs in the vehicle when a driver of the vehicle provides an input to the vehicle, the state detector detects the input to the vehicle by the driver, and generates the output signal according to the detected input by the driver (see columns 3-5, lines 59-47; and column 8, lines 18-38, and lines 51-60), and guidance generator configured to prepare, in response to the detecting signal, the guidance to guide the follower vehicle, wherein the guidance includes a photographed image of a view ahead of the leader vehicle (see

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column 2, lines 11-57; and column 3, lines 20-58). Jitsukata et al. do not explicitly disclose information of the state change overlaid on the photographed image. However, Jitsukata et al. disclose vehicle to vehicle communication including “deceleration running signal” and image processing ECU 12 output on lane vehicle position data (see column 3, lines 33-35); output of radar and image processing are supplied to ECU 13 (column 3, lines 35-38); ECU 13 information supplies to vehicle communication unit (column 3, line 40); and vehicle communication including “deceleration running signal” (column 3, lines 47-50). Therefore, it would have been obvious to one of ordinary skill in the art that Jitsukata et al. implicitly disclose information of the state change overlaid on the photographed image, “deceleration running signal” state change implies the state change and output to image processing ECU 12.

Furthermore, to modify for the teach of Jitsukata et al., about the state change overlaid on the photographed image, Gan et al. disclose the heading angle and following distance are display as an image for the following vehicle (see the abstract; column 1, lines 15-25; columns 2-3, lines 54-56; columns 4-5, lines 8-3; and column 6, lines 45-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Jitsukata et al. by combining the state change overlaid on the photographed image for directing the following vehicle follow the route of the lead vehicle to maintain a desired running path.

As per claims 2-3, Jitsukata et al. disclose wherein the state detector is coupled to a turn signal installed in the leader vehicle, detects operation of the turn signal and outputs the detecting signal, the guidance generator obtains a directional input to the turn signal (see columns 3-5, lines 59-67; and column 6, lines 1-56).

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As per claim 4, Jitsukata et al. disclose the guidance generator obtains a position of the leader vehicle (see columns 4-5, lines 39-47; and columns 7-8, lines 41-17).

As per claim 6, Jitsukata et al. disclose the guidance generator obtains a running speed of the leader vehicle (see column 8, lines 18-60).

As per claims 12, 14, 18, and 20, Jitsukata et al. disclose an information providing system comprising: a sender used when a vehicle is a leader vehicle that leads a follower vehicle, the sender configured to provide the follower vehicle with guidance for guiding the follower vehicle, the sender including: a state detector configured to detect a state change in the leader vehicle, the state change occurs in the vehicle when a driver of the vehicle provides an input to the vehicle, wherein the state change occurs in the vehicle when a driver of the vehicle provides an input to the vehicle, the state detector detects the input to the vehicle by the driver, and generates the output signal according to the detected input by the driver (see columns 3-5, lines 59-47; and column 8, lines 18-38, and lines 51-60), a guidance generator configured to prepare, in response to the state change detected by the state detector, the guidance including a photographed image of a view ahead of the leader vehicle (see column 2, lines 11-58; and column 3, lines 20-58), a presenter installed in the follower vehicle, configured to receive the sent guidance and present to present the guidance, the presenter including a guidance obtainer configured to obtain the guidance including the photographed image of the view ahead of the leader vehicle (see column 7, lines 15-28; and column 9, lines 14-57), and an output unit configured to provide the user with the guidance obtained by the guidance obtainer (see column 7, lines 28-40). Jitsukata et al. do not explicitly disclose information of the state change overlaid on the photographed image. However, Jitsukata et al. disclose vehicle to vehicle communication including “deceleration

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running signal” and image processing ECU 12 output on lane vehicle position data (see column 3, lines 33-35); output of radar and image processing are supplied to ECU 13 (column 3, lines 35-38); ECU 13 information supplies to vehicle communication unit (column 3, line 40); and vehicle communication including “deceleration running signal” (column 3, lines 47-50).

Therefore, it would have been obvious to one of ordinary skill in the art that Jitsukata et al. implicitly disclose information of the state change overlaid on the photographed image, “deceleration running signal” state change implies the state change and output to image processing ECU 12.

Furthermore, to modify for the teach of Jitsukata et al., about the state change overlaid on the photographed image, Gan et al. disclose the heading angle and following distance are display as an image for the following vehicle (see the abstract; column 1, lines 15-25; columns 2-3, lines 54-56; columns 4-5, lines 8-3; and column 6, lines 45-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Jitsukata et al. by combining the state change overlaid on the photographed image for directing the following vehicle follow the route of the lead vehicle to maintain a desired running path.

4. Claims 5, and 7, are rejected under 35 U.S.C. 103(a) as being unpatentable over Jitsukata et al. (6169940), and Gan et al. (5835880) as applied to claim 1 above, and further in view of Taguchi et al. (6553288).

As per claim 5, Jitsukata et al., and Gan et al. do not disclose the guidance generator obtains time on the leader vehicle. However, Taguchi et al. disclose the guidance generator obtains time on the leader vehicle (see columns 11-12, lines 32-67). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of

Jitsukata et al., and Gan et al. by combining obtains time on the leader vehicle to keep track the path of the leader vehicle.

Also, as per claim 7, Taguchi et al. disclose wherein the guidance generator obtains a relative distance between the leader vehicle and the follower vehicle according to a running speed of the leader vehicle (see column 4, lines 11-49; and columns 5-6, lines 36-5), and a position of the leader vehicle related to time, a running speed of the follower vehicle, and a position of the follower vehicle related to time (see columns 11-12, lines 32-67).

5. Claims 10, and 16, are rejected under 35 U.S.C. 103(a) as being unpatentable over Jitsukata et al. (6169940), in view of Gan et al. (5835880), and Barrett et al. (5331561).

As per claims 10, and 16, Jitsukata et al. disclose an information providing device comprising: a guidance obtainer to obtain guidance including a photographed image of a view ahead of a leader vehicle that leads a follower vehicle and a position where the guidance was prepared (see column 7, lines 15-28; and column 8, lines 18-60). Jitsukata et al. do not explicitly disclose information of the state change overlaid on the photographed image. However, Jitsukata et al. disclose vehicle to vehicle communication including “deceleration running signal” and image processing ECU 12 output on lane vehicle position data (see column 3, lines 33-35); output of radar and image processing are supplied to ECU 13 (column 3, lines 35-38); ECU 13 information supplies to vehicle communication unit (column 3, line 40); and vehicle communication including “deceleration running signal” (column 3, lines 47-50). Therefore, it would have been obvious to one of ordinary skill in the art that Jitsukata et al. implicitly disclose information of the state change overlaid on the photographed image, “deceleration running signal” state change implies the state change and output to image processing ECU 12.

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Furthermore, to modify for the teach of Jitsukata et al., about the state change overlaid on the photographed image, Gan et al. disclose the heading angle and following distance are display as an image for the following vehicle (see the abstract; column 1, lines 15-25; columns 2-3, lines 54-56; columns 4-5, lines 8-3; and column 6, lines 45-65).

Jitsukata et al. also do not disclose history detector. However, Barrett et al. disclose a history detector to detect running history of the follower vehicle, an output unit to provide with the guidance obtained by the guidance obtainer, wherein the guidance obtainer includes a selector configured to compare the running history with the position, the selector configured to select the guidance that was prepared at the closest position ahead of a present position of the follower vehicle, and the selector configured to transfer the selected guidance to the output unit (see columns 6-8, lines 55-66).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Jitsukata et al. by combining the state change overlaid on the photographed image for directing the following vehicle follow the route of the lead vehicle to maintain a desired running path; and combining history detector to determine follower vehicle position and to match the follower vehicle along a guided path of the leader vehicle.

6. Claim 11, is rejected under 35 U.S.C. 103(a) as being unpatentable over Jitsukata et al. (6169940), Gan et al. (5835880), and Barrett et al. (5331561) as applied to claim 10 above, and further in view of Taguchi et al. (6553288).

As per claim 11, Jitsukata et al., and Barrett et al. do not disclose relative distance between the leader and the follower vehicle. However, Taguchi et al. disclose the obtained guidance includes the position where the leader vehicle prepared the obtained guidance, time

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when the leader vehicle passed the position, and a speed of the leader vehicle (see columns 11-12, lines 32-67), and the guidance obtainer finds a relative distance between the leader and the follower vehicle according to the position, time, and a speed of the leader vehicle and the follower vehicle (see column 4, lines 11-49; and columns 5-6, lines 36-5). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Jitsukata et al. by combining relative distance between the leader and the follower vehicle to determine path tracking of the leader and the follower vehicle.

7. Claims 8-9, and 15 are allowable.

Remarks

8. Applicant's argument filed on 4/7/06 has been fully considered. Upon updated search, the new ground of rejection has been set forth as above.

Applicant's argue on page 11, last paragraph, and page 13, second paragraph that the images acquired by Jitsukata's CCD are not used by the driver to follow a leader vehicle. However, in review Jitsukata ('940), ('940) discloses image processing of road surface in front of one vehicle (column 2, lines 18-21), vehicle to vehicle communication for generating running instruction, the road data between vehicles (column 2, lines 31-54). Also, ('940) discloses image ECU 12 supplied to ECU 13 to vehicle to vehicle communication (column 3, lines 33-40), and image and instruction communication applies to subsequent vehicle following the leading vehicle (column 9, lines 14-57). Therefore, images acquired by Jitsukata's CCD is used to guide the follow vehicle, and by the driver to follow a leader vehicle.

Gan et al. ('880) is new in this rejection for supporting about the state change overlaid on the photographed image as cited as above.

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalena Tran whose telephone number is 571-272-6968. The examiner can normally be reached on M-F 6:30 AM-4:00 PM), off every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on 571-272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patent Examiner
Dalena Tran

A handwritten signature in black ink, appearing to read 'Dalena Tran', with a long horizontal flourish extending to the right.

January 23, 2006